



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In the Application of:

David Guy Hill

Application No.: 10/682,654

Filed: October 9, 2003

For: SYSTEM AND METHOD FOR
MEASUREMENT OF LOCAL
LUNG FUNCTION USING
ELECTRON BEAM CT

Examiner: John Fernando Ramirez

Group Art Unit: 3737

Attorney Docket No.: 124399-2
(13633US02)

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Date

PRE APPEAL BRIEF REQUEST FOR REVIEW

Mail Stop AF
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

The Applicants request review of the final rejection in the above-identified application. No amendments are being filed with this request.

This request is being filed with a notice of appeal and a petition for a one-month extension of time.

The review is requested for the reasons stated on the attached sheets.

Respectfully submitted,

Date: June 2, 2006

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REMARKS

The present application includes pending claims 1-21, all of which have been rejected. The Applicants respectfully submit that the claims define patentable subject matter.

Claims 1, 3-4, 6, 11-12, and 19-21 remain rejected under 35 U.S.C. §102(b) as being anticipated by Rienmueller et al. (U.S. Pat. No. 5,067,494). Claims 2, 9-10, 13-14, and 18 remain rejected under 35 U.S.C. §103(a) as being unpatentable over Rienmueller et al. in view of Plewes (U.S. Pat. No. 4,773,087). Claims 5, 7-8, and 15-16 remain rejected under 35 U.S.C. §103(a) as being unpatentable over Rienmueller et al. in view of Sontag et al. (U.S. Pat. No. 6,298,260). The Applicants respectfully traverse these rejections at least for the reasons previously set forth during prosecution and the following:

I. Rienmueller Does Not Teach or Fairly Suggest Claims 1, 3, 4, 6, 11, 12 and 19-21

The Applicants respectfully submit that Rienmueller does not teach or fairly suggest the above-identified claims of the present application. Rienmueller clearly triggers a scan of an entire lung volume and measures the entire respiratory volume of the patient via a scan triggered based on the respiratory activity of the patient. *See* April 7, 2006 Amendment at pages 7-8; December 28, 2005 Amendment at pages 7-8; and February 7, 2006 Office Action at pages 2-3. Rienmueller discusses precise measurement of the complete respiratory volume of a patient, give or take a small error, and emphasizes that it measures the exact vital capacity of the patient and not merely a portion thereof. *Id.* For example, Rienmueller fails to teach or fairly suggest scanning at least a cross-section of a *lung* rather than an “entire cross-section of the patient” or measuring *local* lung function, as opposed to the full respiratory volume or vital capacity of the patient. *Id.* The Applicants have submitted amendments to claims 1, 3-5, 11 and 19-21 which clarify that local lung function data is obtained. *See* April 7, 2006 Amendment at pages 2-6. However, the Examiner has declined to enter these amendments. *See* May 3, 2006 Advisory Action at pages 1-2. Therefore, the Applicant respectfully submits that independent claims 1, 11, and 21 and dependent claims 3-4, 6, 12 and 19-20 are in condition for allowance.

II. Combining Rienmueller with Plewes Does Not Render Claims 2, 9, 10, 13, 14 and 18 Unpatentable

The Examiner attempts to fill the deficiencies of Rienmueller with respect to the above-identified pending claims by adding Plewes. *See* February 7, 2006 Office Action at pages 5-6. However, Plewes does not teach or fairly suggest triggering a scan based on patient air flow.

See April 7, 2006 Amendment at pages 9-10 and December 28, 2005 Amendment at pages 8-9. Plewes also does not teach or fairly suggest obtaining and using local lung function data or local lung image data. *Id.* Furthermore, Plewes does not teach or fairly suggest scanning and obtaining lung image data during a sweep of at most 33 ms or at most 50 ms. *Id.* Rather, Plewes simply states that a scanning beam may be varied in velocity, pulse width, and/or shape. *Id.* Thus, Plewes fails to overcome the shortcomings of Rienmueller et al., as described above.

The Examiner states that the added limitations of claims 2, 9, 10, 13, 14 and 18 “are considered conventional in the art as evidenced by the teachings of Plewes (US 4,773,087).” See February 7, 2006 Office Action at page 6. However, the limitations are not taught by Plewes, and the Examiner provides no citation or support for such an assertion. The section of Plewes cited by the Examiner does not teach or suggest these limitations. Rather than making very general statements apart from the references themselves, establishing a *prima facie* case of obviousness under section 103 requires a suggestion to combine and the presence of all claimed elements in the combination and not just a general goal of greater capabilities. See MPEP 2143. Therefore, the Applicant respectfully submits that claims 2, 9-10, 13-14 and 18 are allowable.

III. A Combination of Rienmueller with Sontag Does Not Render Claims 5, 7, 8, 15 and 16 Unpatentable

The Examiner attempts to fill the deficiencies of Rienmueller with respect to the above-identified pending claims by adding Sontag. See February 7, 2006 Office Action at pages 6-8. However, Sontag does not teach or suggest imaging a cross-section or portion of a lung or obtaining local lung function data. See April 7, 2006 Amendment at pages 10-11 and December 28, 2005 Amendment at pages 9-10. Furthermore, Sontag does not teach or fairly suggest processing local lung function data to generate a plot of lung attenuation versus time. *Id.* Rather, Sontag shows a graph of air flow in a patient rather than lung attenuation versus time. *Id.* and February 7, 2006 Office Action at page 7.

The Examiner states that the added limitations of claims 5, 7, 8, 15 and 16 “are considered conventional in the art as evidenced by the teachings of Sontag et al. (US 6,298,260).” See February 7, 2006 Office Action at pages 7-8. However, the limitations are not taught by Sontag, and the Examiner provides no citation or support for such an assertion. The section of Sontag cited by the Examiner does not teach or suggest these limitations. Rather than making very general statements apart from the references themselves, establishing a *prima facie*

June 1, 2006

case of obviousness under section 103 requires a suggestion to combine and the presence of all claimed elements in the combination and not just a general goal of greater capabilities. *See* MPEP 2143. Therefore, the Applicant respectfully submits that claims 5, 7, 8, 15 and 16 are allowable.

IV. The Applicants' Amendment Helps Place the Claims in Condition for Allowance and Should Not Require an Additional Search

The Applicant has attempted to amend claims 1, 3-5, 11 and 19-21 to clarify that local lung function data is obtained. See April 7, 2006 Amendment at pages 2-6. The amendments add no new matter and simply reflect the discussions and exchanges between the Applicant and the Examiner to place the claims in condition for allowance. Since the amendments reflect the specification and the Applicants ongoing arguments and discussion with the Examiner in rebuttal of the rejections, these amendments do not present new issues requiring further consideration or search. The Examiner's search should have included such subject matter based at least on the Applicants' first response of December 28, 2005 and the content of the claims prior to the amendment. Accordingly, for at least the above reasons, the Applicants respectfully submit that the Examiner should have entered and considered the amendments filed in the response of April 7, 2006.

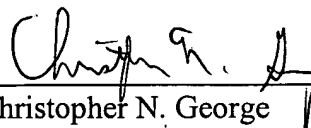
V. Conclusion

The Applicants respectfully submit that the claims of the present application should be in condition for allowance at least for the reasons discussed above and request reconsideration of the claim rejections. The Commissioner is authorized to charge any necessary fees, including the \$250 Notice of Appeal fee, or credit any overpayment to the Deposit Account of GTC, Account No. 070845.

Respectfully submitted,

Date: June 2, 2006

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